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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,283	10/18/2001	Thuji Simon Lin	47450/JFO/B600	2222
23363	7590	01/26/2006	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			WARE, CICELY Q	
PO BOX 7068			ART UNIT	
PASADENA, CA 91109-7068			PAPER NUMBER	
			2634	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/045,283	Applicant(s) LIN ET AL.	
	Examiner Cicely Ware	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-46,48-51,53 and 54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,5-46,48 and 54 is/are allowed.
- 6) ☒ Claim(s) 49 is/are rejected.
- 7) ☒ Claim(s) 50 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Terminal Disclaimer***

1. The terminal disclaimer filed on 11/14/2005 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of 09/6,553,063 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Response to Arguments***

2. Applicant's arguments, see Terminal Disclaimer filed 11/14/2005 with respect to the rejection(s) of claim(s) 1, 2, 3, 11-18, 47, 49-53 are rejected under 35 U.S.C. 102(b) and Double Patenting of claims 1-54 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

3. Applicant's arguments filed 11/14/2005 have been fully considered but they are not persuasive. Applicant recites that Williams does not disclose "wherein the selectable predetermined integer number of data bits is one of  $k$  bits and  $k+1$  bits, where  $k$  is an integer number of data bits". However examiner asserts that Williams in fact discloses "wherein the selectable predetermined integer number of data bits is one of  $k$  bits and  $k+1$  bits, where  $k$  is an integer number of data bits" (col. 3, lines 4-65), which is encompassed by the recitation in Claim 49 of "symbol being composed of a selectable integer number of data bit vectors, each of the data bit vectors being composed of a

selectable predetermined integer number of the data bits", already recited in claim 49 previously.

### ***Drawings***

4. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figs. 1-6 contain handwritten elements. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 49 is rejected under 35 U.S.C. 102(b) as being anticipated by Williams (5,598,435) (cited previously).

With regard to claim 49, Williams further discloses A communication system communicating data bits through a data channel, comprising: a data transformer coupled with the data channel, the data transformer transforming the data bits into a transmission symbol, the transmission symbol being composed of a selectable integer

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number of data bit vectors, each of the data bit vectors being composed of a selectable predetermined integer number of the data bits (col. 3, lines 1-67), the data transformer mapping a selectable number of transmission symbols into a data symbol selected from a signal constellation, the signal-constellation being one of an integer signal constellation and a power-of-two signal constellation, the selectable predetermined integer number of data bits being selected to provide a preselected average data bit transmission rate (col. 1, lines 58-67, col. 2, lines 40-46, col. 4, lines 24-44), wherein the selectable predetermined integer number of data bits is one of  $k$  bits and  $k+1$  bits, where  $k$  is an integer number of data bits (col. 3, lines 4-65).

***Allowable Subject Matter***

6. Claims 50-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a communication device for communicating data through a data channel. Prior art references show similar methods but fail to teach: **"a controller coupled between the data channel and the data transformer, the controller sensing at least one data channel condition and compelling the data transformer to select one of the selectable integer number of data bit vectors and the selectable predetermined integer number of the data bits, responsive thereto"**, as in claim 50; **"wherein the**

**selectable predetermined number integer number of data bits is adaptively selected", as in claim 51.**

7. Claims 1, 2, 5-46, 48, 54 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a communication device for communicating data through a data channel. Prior art references show similar methods but fail to teach: **"wherein the data transformer, responsive to the controller, reversibly groups ones of the first predetermined integer number of data bits into selected ones of the selectable integer plurality of data bit vectors and ones of the second predetermined integer number of data bits into selected others of the selectable integer plurality of data bit vectors in the response to the data channel condition, the selectable integer plurality of data bit vectors forming at least one data symbol corresponding to a predetermined pattern being representative of a preselected signal constellation", as in claim 1; "forming ones of a first selectable predetermined integer number of data bits into selected ones of a selectable integer plurality of data bit vectors, (2) forming ones of a second selectable predetermined integer number of data bits into selected others of the selectable integer plurality of data bit vectors", as in claim 48; "maximum-likelihood sequence estimation receiver selects a path through a code trellis having a substantially minimum noise-power-inversely-weighted-squared-Euclidean distance", as in claim 54.**

***Conclusion***

**9. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
January 23, 2006

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER